2006 Telephone Report to the Regulatory Flexibility Committee of the Indiana General Assembly

Indiana Utility Regulatory Commission

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List of Acronyms

BPL	Broadband over Power Lines
CLEC	Competitive Local Exchange Carrier
CMRS	Commercial Mobile Radio Service
CTA	Certificate of Territorial Authority
DSL	Digital Subscriber Line
DSA	Designated Service Area
FCC	Federal Communications Commission
HEA	House Enrolled Act
IEEE-SA	Institute of Electrical and Electronics Engineers-Standards Association
IETF	International Engineering Task Force
ILEC	Incumbent Local Exchange Carrier
IMS	IP Multimedia Systems
IP	Internet Protocol
ISP	Internet Service Provider
IURC	Indiana Utility Regulatory Commission
LFA	Local Franchise Authority
MPLS	Multi-Protocol Labeling System
MVPD	Multichannel Video Programming Distributor
MTSO	Mobile Telephone Switching Office
NARUC	National Association of Regulatory Utility Commissioners
NCTA	National Cable and Telecommunications Association
PEG	Public Education and Governmental
PSTN	Public Switched Telephone Network
RLECs	Rural Incumbent Local Exchange Carriers
TA-96	Telecommunications Act of 1996
VoIP	Voice Over Internet Protocol
Video over IP	Video over Internet Protocol
Wi-Fi	Wireless Fidelity
Wi-Max	Worldwide Interoperability for Microwave Access

1. Executive Summary

The telecommunications environment is changing rapidly in Indiana and around the nation.

The telecommunications environment is changing rapidly in Indiana and around the nation. In 2006, the Indiana General Assembly passed into law House Enrolled Act 1279 (HEA 1279) which resulted in significant changes to telecommunications regulation, including video services for Indiana's telecommunications market. An economy driven by communications is reflected in various passages in HEA 1279. The statute reflects the very nature of this dynamic environment because it acknowledges the essence of growth and innovation through competition among and between telephone companies, cable providers and wireless telephone companies. It is the role of the IURC to manage and implement these changes in an orderly manner as the stewards of the Governor's office and the Indiana General Assembly. Structuring a modified role for the IURC as regulators in this new, transitional process is far from traditional, but it is nonetheless important as we, the consumers of Indiana, move toward a market solution for all aspects of our telecommunications services.

The video franchising framework designed by the Indiana General Assembly, as example, opens the door to a new level of competition and opportunity by which all parties are now able to compete with one another under similar rules.

The video franchising framework designed by the Indiana General Assembly, as example, opens the door to a new level of competition and opportunity by which all parties are now able to compete with one another under similar rules. Under HEA 1279, the IURC has designed an expedited process that preserves the benefits of video franchising for local communities around Indiana while making market entry efficient, certain and easy. The IURC has engaged in similar activities related to other matters as structured by HEA 1279 that will provide predictability and guidance to industry stakeholders and consumers alike in a user-friendly manner.

Some of the measures in which the IURC has engaged itself include, but are not limited to the following:

- Designated an IURC 1279 Implementation Team which meets monthly;
- The IURC issued an Emergency Order in Cause No. 43009 on March 29, 2006 adopting a new Certificate of Territorial Authority application form and accompanying process for Local Exchange Carriers;
- The Telecommunications Division has developed a comprehensive process for tracking and receiving notices of rate increases for Basic Telecommunications Service which also starts the 18-month clock for broadband deployment as contemplated under HEA 1279;

- The IURC issued a General Administrative Order on June 14, 2006 adopting a Notice Application when a company requests a change in its status as a Provider of Last Resort;
- The IURC issued a General Administrative Order on June 14, 2006 adopting a Video Franchise Authority Application Form, a Notice of Change Form, and instructions related to the filing of the forms; and
- The IURC expanded its IT databases to include information on video franchises as well as information regarding consumer issues related to video providers.

Growth in technology has been the driving force behind competition in the telecommunications industry across the nation as well as here in Indiana.

The availability of new communications technologies can spur economic growth. Furthermore, growth in technology has been the driving force behind competition in the telecommunications industry across the nation as well as here in Indiana. The telecommunications network is transforming and evolving with dramatic technological changes as it moves from the copper loops and digital switching to an Internet Protocol-based network with new wireline "last mile" technologies such as coaxial cable, power lines, and fiber-optic cable. These technological advancements will allow providers greater efficiency in provisioning the latest advanced services, which will benefit consumers in the long run in terms of price and availability of services.

Wi-Fi and Wi-Max are two emerging wireless broadband options.

Along with new wireline technologies we present an overview of two emerging wireless broadband options: Wireless Fidelity (Wi-Fi) and Wireless Mircowave Access (Wi-Max), which provide greater flexibility for consumers who prefer a mobile, wireless option. Having a broadband connection (wireline or wireless) available will enable Indiana's consumers to receive the benefits once enjoyed only by consumers in larger, more densely populated cities. Once a customer has this broadband connection, Voice over IP (VoIP) and other advanced services become a viable alternative to traditional voice service.

Other technological enhancements are continuing to emerge from providers of all sizes and characteristics. For instance, important developments are occurring in switching equipment like optical switches that can greatly expand and increase data transmission capabilities. Finally, one of the most important technological changes that will benefit consumers is the convergence of wireless, wireline, and Internet Protocol network technologies -- simply stated, a customer could have one number, address book, and voice mail bank that could operate on any network.

The IURC is attempting to collect additional data due to the changing competitive nature of the telecommunications market in Indiana.

Given the changing competitive nature of the telecommunications market in Indiana, for the IURC to provide the same data as in past years would not yield relevant information. Therefore, we are continuing to meet with traditional telephone companies in addition to alternative providers of voice and cable services to gain insight into how they track customer-specific data. This type of information will enable the IURC to provide a fully developed analysis of the competitive landscape in the next year.

The Indiana General Assembly has delegated to the IURC state issued video franchising authority.

Additional responsibilities to the IURC this year come in the form of state issued video franchising authority as delegated by the Indiana General Assembly. The IURC is charged with prescribing the form and timeframe in which incumbent providers, such as cable companies, and new video service providers may seek state issued video franchising. The IURC has developed a comprehensive process to manage the intake of initial applications as well as amended filings that may be used by providers to expand their video service territories. As of September 6, 2006, AT&T is the only company to be granted a state issued video franchise. Guided by the language in the statute, the IURC may also intervene in situations where a provider and a local governmental unit have a dispute regarding franchise fees. While the IURC shall not directly assess these franchise fees, the Commission will formally adjudicate disputes that arise when the parties cannot successfully calculate the franchise fee, currently set at 5% of gross revenue according to HEA 1279.

In anticipation of future reports, the IURC has begun to collect data on video service providers.

In anticipation of future reports on the status of competition and technological change in the provision of video service, the IURC has begun to collect data on video service providers. Based on numerous data sources and our own research we have found the following:

- The FCC reports that nationwide 65.4 million customers subscribe to basic cable as of June 2005. The latest version of the Television and Cable Factbook reports that in Indiana 1.39 million customers subscribe to basic cable.
- The Nation Cable and Telecommunications Association reports that as of March 2006 in the United States the largest video service provider is Comcast Cable with 21,495,000 customers. The latest version of the Television and Cable Factbook reports that in Indiana the largest video service provider is Comcast Cable with 664,070 customers.

- The Nation Cable and Telecommunications Association reports that the largest cable system in the United States as of December 2005 is Time Warner Cable in Houston, TX with 764,903 basic cable customers. The latest version of the Television and Cable Factbook reports that in Indiana the largest cable system is Comcast Cable in Indianapolis with 157,111 basic cable customers.
- Based on FCC Data, in Indiana the majority of counties are served by two or three video service providers. However, most do not compete directly.
- The IURC found 12 affiliates of Rural Incumbent Local Exchange Carriers (RLECs) and 2 affiliates of electric companies competing for video services.
- The IURC found 18 communities with a population less than or equal to15,000 with video service competition and 2 communities with a population greater than 15,000 with video service competition.
- Two studies by the General Accounting Office found that when competition occurs through overbuilding an existing network, rates fall.

With the passage of HEA 1279, which eased the regulatory burden for obtaining a video franchise, the IURC expects video services competition to spread to more communities.

Universal service remains at the forefront of telecommunications policy.

Universal service remains at the forefront of telecommunications policy because of the financial implications for telecommunications providers and the social necessity of keeping citizens connected. For purposes of this report, we are using the term "universal service" to mean the percentage of the population with a telephone. While universal service implies much more than that, the intent of various programs to help customers connect to the network or to provide specific funding to support companies that serve high cost areas is to keep basic local telephone rates affordable in order for people to sign-up and maintain that service.

The Indiana General Assembly directed the IURC to implement rules for the establishment of a state Lifeline fund.

Aggregate data from the Federal Communications Commission shows that since the passage of the Telecommunications Act of 1996, the percentage of population with a telephone in Indiana has fallen. We are now further from the national average than at any recent time. The Indiana General Assembly recognized the need to specifically address telephone service affordability and thus directed the IURC to implement rules for the establishment of a state Lifeline fund. The Lifeline fund will directly benefit consumers below a certain income level and those who participate in various social programs. On July 6, 2006, the IURC opened a docket to address the funding mechanism for the Lifeline fund. The fund shall be fully functional by 2009. The goal of having a state fund in place for Indiana consumers is to get them connected to the public telephone network. By doing that, Indiana could see an increase in telephone subscription rates, particularly among low-income consumers. A healthy economy provides growth in all facets of

industry and community, and the Lifeline program allows low-income consumers to participate in and benefit from this growth.

Technology has driven the cost of bundles of services lower, but the IURC has not determined the effect of technology on Basic Telecommunications Service.

HEA 1279 established a framework to allow the market to determine the rates for all telecommunications services except Basic Telecommunications Service, which is deregulated in 2009. This was in part due to the understanding that technology drives competition for telecommunications services. Technology has driven the cost of bundles of services lower, but the IURC has not determined the effect of technology on Basic Telecommunications Service. Instead of analyzing many telecommunications services, we compare Basic Telecommunications Service, wireline telephone service with vertical features, cellular telephone service, and VoIP based on a number of characteristics beyond pricing including calling scope, equipment requirements, emergency calling, power source, and service reliability. Customers must take all of these characteristics into consideration when choosing an alternative to wireline service. Regarding the price of any telecommunications service, the use of discretionary surcharges confuses customers and makes price comparisons more difficult. The difficulty of making price comparisons may potentially negate the benefits that market solutions can provide.

The Consumer Affairs Division registers video service complaints and directs customers to their video service provider for resolution.

Confusion with discretionary surcharges may result in a customer registering a complaint with the IURC's Consumer Affairs Division In 2005, the IURC's Consumer Affairs Division continued its traditional role of registering and resolving consumer complaints. Billing Disputes dominated all categories with 30 percent of the total complaints. This was followed by Cramming with 14 percent, Service Problems with 11 percent, Disconnection with 9 percent, New Service Initiation Problems with 8 percent, Slamming with 7 percent, and Telecommunications Service Interruptions with 6 percent. With the passage of HEA 1279, the Consumer Affairs Division continues to register all the complaints listed above but now directs customers to the company to resolve most complaints. The Consumer Affairs Division maintains it ability to resolve complaints regarding Basic Telecommunications Services, slamming, and cramming. Furthermore, after July 1, 2006, the Consumer Affairs Division began to register video service complaints and directs customers to their video service provider for resolution.

2. Implementation of HEA 1279

A. The IURC is Committed to Implementing the New Telecommunications Law in an Efficient and Expeditious Manner.

Since the passage of HEA 1279, the IURC has worked diligently to implement the new telecommunications law. Immediately upon passage, the IURC formed an implementation team to address specific mandates from the legislation and began working to develop a plan of action. The implementation team focused on five major areas of the legislation: Certificate of Territorial Authority (CTA), Video Franchising, a state Lifeline Program, the Rate Transition Period tied to Broadband deployment, and additional reporting requirements.

Recognizing that this new legislation has a substantial effect on many other parties, the IURC believed it would be beneficial to the overall process to foster relationships and open communication with those parties immediately affected by HEA 1279: the telecommunications and cable industries. The IURC hosted several meetings with both telephone and cable companies to discuss the fine points and implications of HEA 1279. Additionally, the IURC has sought extensive input from these parties as the internal processes were developed.

The IURC created a streamlined process for local service providers to apply for a statewide certificate of territorial authority.

One of the first priorities in HEA 1279 was to create similar rules across different telecommunications providers. The IURC modified its procedures and forms for the CTA to accomplish this legislative goal.

While still docketed for tracking and administrative purposes, the new process is handled through an expedited form and does not require a company to have legal representation. The Commission also decided that the most efficient way of creating the application form would be to follow the outline of requirements that the legislation establishes for Communications Service Providers now, in 2006, rather than waiting until the legislatively mandated deadline of 2009. By using these requirements, the process would likely not change in the future. The Commission implemented an Emergency Order on March 29, 2006 adopting the new application form and accompanying process. CTA Applications that were pending under the former process were immediately flagged to be handled under the new, expedited process.

The IURC created a streamlined process for the approval of state issued video franchise authority.

HEA 1279 makes the IURC the sole franchising authority for the provision of video service in Indiana as of July 1, 2006. The IURC, in conjunction with various industry stakeholders, developed the appropriate forms and procedures necessary to carry out the mandates of the new statute while enabling the IURC to ensure an efficient and simplified transition process to assist

carriers that wish to move from local to state authority. This transition will allow video service providers the requisite flexibility to offer a broader spectrum of services to a wider audience of consumers across the state.

On August 8, 2006, AT&T filed the first application for a state issued video franchise, which was granted on August 30, 2006.

On August 8, 2006, Indiana Bell Telephone Company, Incorporated doing business as AT&T Indiana (AT&T) filed the first application for a state issued video franchise in Indiana. AT&T states that it seeks authority to provide video service in certain areas within its local exchange territory, and filed a Motion for Protection of Confidential and Proprietary Information dealing with the detailed description of the Designated Service Areas (DSA) in which it seeks authority to provide video service, as well as the expected date of deployment of video service in each DSA. In its Application, AT&T indicates that it will deploy its video service using fiber technology in areas where there is no existing network and using a combination of fiber and copper in areas where there is an existing copper wireline network. AT&T plans to provide all major types of programming to its customers. On August 30, 2006, the IURC issued an order granting the Certificate of Franchise Authority.

On August 14, 2006, Daviess-Martin Rural Telephone Corporation filed the second Application. In its Application, Daviess-Martin indicates it will use twisted pair copper in its existing ILEC territory to offer basic service, premium service, and possible Video-on-Demand in the future. The Application for Daviess-Martin is complete, but as of September 6, 2006, the Commission has not issued an order granting the Certificate of Franchise Authority.

B. The IURC is Establishing a State Lifeline Fund to Provide Consumers with Financial Assistance for Local Telephone Service.

The Telecommunications Act of 1996[1] reiterated the importance of the availability of telephone service for all consumers by including the principle that "consumers in all regions of the nation, including low income consumers . . . should have access to telecommunications and information services . . ." The Indiana General Assembly also recognized the increasing financial burdens that exist for some consumers and sought to mitigate this burden as it relates to their local telephone service, and envisioned the establishment of a state Lifeline fund. The state Lifeline fund program shall ensure that quality telecommunications services are available to low-income

[1] The Telecommunications Act of 1996 (TA-96) was a comprehensive overhaul of the Communications Act of 1934 enacted "to promote competition and reduce regulation in order to secure lower prices and higher quality service for American telecommunications consumers and encourage rapid deployment of new telecommunications technologies." Among the many items in TA-96, it allowed competitors to enter the local telecommunications market by leasing facilities from the incumbent local exchange company (ILEC), reselling the service of the ILEC, or constructing its own facilities. It also set up several criteria for a Bell Operating Company to enter the long distance market. Finally, TA-96 created a Federal-State Joint Board on Universal Service, developed principles for Universal Service, created a contribution mechanism, and expanded the program to include school, libraries, and rural health care facilities.

customers at just, reasonable, and affordable rates. On July 6, 2006, the IURC opened Cause No. 43082 to address the funding mechanism for the Lifeline fund.[2] The IURC is working to establish the rules for the fund in time for the 2009 deadline. The IURC is planning workshops with industry personnel to coordinate, among other things, the appropriate scope of oversight regarding administration of the fund. The IURC is committed to the principle of keeping consumers connected to the network and as such will also be engaged in educational outreach efforts to build awareness among eligible consumers of the availability of this program[3] in cooperation with the industry.

C. The IURC has Created a Process to Review Requests for Rate Increases and Broadband Deployment.

HEA 1279 contemplates allowing carriers to implement a limited rate increase for Basic Telecommunications Service of up to one dollar ($1.00) per year with the condition that by 18 months after the effective date of the increase, the carrier will offer broadband service to at least fifty percent of the households in the local exchange area where the rate increase is effective. The Indiana General Assembly has provided the IURC with the oversight capability necessary to process these requests and monitor each carrier's progress toward achieving its broadband requirement.

HEA 1279 preserves the IURC's role as the body charged with approving these rate increases. Additionally, the IURC retains the ability to review and approve the initial rates for a provider that begins offering Basic Telecommunications Service during the rate transition period, develop processes to determine the appropriateness of granting extensions of the broadband deployment period, and to determine whether a provider offers broadband service to at least fifty percent of the households in the local exchange area. These safeguards, as guaranteed by HEA 1279, are essential to consumers as changes in the telecommunications market continue to evolve. The IURC will utilize its existing authority to ensure that carriers receive the necessary tools with which to expand their services, but also to ensure, where appropriate, that consumers are receiving affordable, high quality telecommunications services.

D. The IURC is Preparing to Gather Additional Data to Include in Future Legislative Reports.

HEA 1279 envisions many new reporting requirements for the IURC in light of the changes within the telecommunications market. The Indiana General Assembly sought to arm the IURC with the requisite authority with which to monitor these rapid changes in the marketplace by clarifying its reporting requirements. One of the IURC's primary responsibilities is to report to the General Assembly an analysis of the status of competition and technological change on universal service and the pricing of all telecommunications services in the State of Indiana.

[2] HEA 1279 specified that a funding mechanism will be established after notice and hearing in a manner based upon and comparable with the federal funding mechanism for the federal Lifeline program.
[3] Lifeline eligibility is discussed in greater detail in Section 6, page 30.

In order for the IURC to obtain a true picture of the effects of competition in the telecommunications and video markets throughout Indiana, the IURC will be requesting data from all providers including wireless and other intermodal providers. Because of certain federal regulations, the IURC, as a state agency, does not have the authority to *require* certain types of providers to respond to data requests or surveys. However, in order to meet its statutory mandates as set forth in HEA 1279, the IURC is moving forward and communicating directly with these providers, including VoIP carriers and Internet Service Providers, in an effort to encourage voluntary participation to complete the picture.

The IURC has attempted to mitigate some of the jurisdictional issues and challenges it is currently facing regarding its reporting obligations. The IURC decided to reach out to providers ahead of the July 2009 timeframe when the IURC will have the authority to require *all* communications service providers to obtain a Certificate of Territorial Authority. (See Chapter 32.5 of HEA 1279) Under this definition, "Communications Service Providers" include video service, broadband service, advanced services, Internet Protocol Services, and commercial mobile service providers. The IURC has contacted this broader spectrum of service providers (although still beyond the jurisdictional reach of the IURC) to assist us with this task. It is the IURC's hope that these providers recognize the overarching intent of the Indiana General Assembly in fostering a competitive and open market and voluntarily cooperate with the request.

In past years, the IURC merely commented on the substitutability of wireless and wireline services based on national data, but did not present Indiana-specific data. These deficiencies lead to an incomplete picture of the true state of competition in the local telecommunications market. The IURC is committed to fulfilling its obligations under HEA 1279 and providing the Indiana General Assembly with the complete range of information it has requested.

3. Video Franchising and Federal Affairs

A. Under HEA 1279, the IURC Has Been Delegated New Responsibilities to Implement State Issued Video Franchising.

HEA 1279, specifically IC 8-1-34, endows the IURC with the sole franchising authority for the provision of video service in Indiana as of July 1, 2006. Prior to this legislative change, a video service provider was required to obtain a franchise from each local governmental unit in which it intended to provide service. Often this entailed negotiating a separate franchise agreement with each county or town in their service area -- a burdensome task. The goal of this new legislation is to make it easier and more efficient to offer cable television and video to more areas throughout the State of Indiana and in turn, bring more competition to the Indiana video market.

Indiana is the first state in the Midwest to have state issued video franchising authority.

HEA 1279, specifically IC 8-1-34, has extensive implications for the IURC. The IURC has been charged with developing a process to issue video franchise authority to incumbent and new video

service providers. The IURC may request additional information to accompany the application that is filed by all providers. The IURC must also prescribe the timeframe and a separate form for reporting changes after receipt of a certificate. The Statute also requires the Commission to establish, via its rulemaking authority, notice requirements for situations regarding changes in service areas, services offered and rates charged.

Additionally, the IURC has responsibilities regarding the determination of the proper gross revenue amount to be used in determining the franchise fees to be paid to a specific governmental unit. These responsibilities become relevant when the holder of the Franchise and the governmental unit are unable to resolve a dispute regarding the revenue and petition the Commission for resolution.

The IURC may also require a video service provider to provide Public Educational and Governmental (PEG) channel capacity, facilities or financial support to one or more units or unincorporated areas in the provider's service area. It may also adopt rules and procedures for use of channel capacity in each unit or unincorporated area and enforce any requirements concerning the provision or use of such PEG channel capacity.

The Commission is also required to implement a process to determine if any groups of potential residential subscribers have been denied access to video service based on income and shall hold a hearing if allegations of discrimination (generally regarded as "redlining") are brought against a video service provider.

To date, in implementing the video sections of the new legislation the IURC has created an Application form and a Notice of Change form for use by companies seeking to obtain a state-issued Certificate of Video Franchise Authority. The Commission created the forms pursuant to the requirements listed in the statute and included requests for other information which it needs to supply complete and accurate reports to the General Assembly. The IURC approved the forms on June 14, 2006 in General Administrative Order 2006-4.

B. Congress Is Considering An Overhaul Of The Federal Telecommunications Laws Including Video Franchising Authority.

Congress has been active beginning in 2005 and continuing into 2006 attempting to design new telecommunications laws around emerging video franchise issues. Several bills have been introduced, but primary focus has narrowed to one bill in each house of Congress. In the Senate, Senator Ted Stevens (R-AK) has proposed a comprehensive reform bill (HR 5252 or Stevens bill) that attempts to acknowledge the convergence of traditional telephone technology and services driven by broadband-capable infrastructure poised to deliver advanced services including video programming. The legislation covers a myriad of topics including universal service, wireless telephony, video franchising and VoIP. Video franchising is on the table for negotiation as many states have already acted or broached the topic with their respective legislatures. As it currently stands, Congress intends to include some language to establish a national video franchise framework and the question remains whether or not there will be a specific carve-out provision to protect states that have already acted in this regard.

Federal preemption jeopardizes Indiana's video franchising law.

The Stevens bill, in its current form, preempts state's endeavors, including Indiana's efforts under HEA 1279 to provide state issued video franchising authority. The National Association of Regulatory Utility Commissioners (NARUC) and other organizations are lobbying Congress vigorously in an effort to protect the progress states like Indiana have made and at a minimum, provide a "carve-out" for states that have made significant progress towards reforming telecommunications laws and moving to a more open market for intermodal competitors, including cable and wireless providers. The Stevens version allows Local Franchise Authorities (LFAs) to grant franchises within 90 days using a prescribed FCC format. Cable providers may apply for regulation and oversight under the federal proposed law in a market upon approval of a new entrant. Moreover, LFAs shall enforce rules, subject to appeals at the FCC. The bill also provides leeway for state and/or local laws of general applicability to the extent that they do not conflict with FCC rules.

The House version of the bill (the Barton Rush COPE Act) provides more flexibility for providers to select between a national framework and preserving their franchises with the LFA. The Barton-Rush COPE Act successfully passed the House by a healthy margin earlier this summer, but focused primarily on video franchising relief rather than including broader provisions for wireless carriers, universal service reform and broadcast/digital/satellite provisions.

Indiana's 3.2 million wireless subscribers are in jeopardy of losing their consumer protection rights.

As previously noted, the Senate bill (HR 5252) preempts states on a variety of levels, namely video franchising and wireless consumer protections. HR 5252 further federalizes the wireless industry and prevents states from overseeing or adjudicating issues related to terms and conditions for wireless carriers. This has the potential effect of significantly reducing consumer protection to millions of wireless consumers. For Indiana, this provision would affect over 3.2 million consumers unless the U.S. Senate is able to reach a compromise position that would protect a state's ability to intervene on behalf of its consumers where appropriate. Consistent with its lobbying efforts, NARUC passed a resolution at its summer 2006 meetings in San Francisco, California that addressed this issue.

In the resolution, NARUC expressed its opposition to provisions in the Stevens bill that restricts and eliminates state oversight by both State Commissions and Attorneys General of certain protections for cell phone consumers. The resolution points out those provisions effectively violate the principles of technological neutrality and of applying even-handed oversight between wireline and wireless carriers. As part of its overall position, NARUC points to provisions in the draft legislation that violate the fiduciary responsibility a government agency such as a state commission that must exercise its oversight of universal service support funding.

States have committed themselves to continue monitoring the issues in this draft legislation and in particular, studying the impact of potential wireless preemption on all consumers. Individuals from both the House and the Senate have tried to amend the legislation to allow additional flexibility for states, but it is not clear at this time what actions will be taken to reconcile these key points. Currently, the Senate Commerce Committee is redrafting the language in the bill and a final version should emerge from the committee prior to the mid-term elections in November 2006.

4. Initial Status of Video Service Providers and Competition in the Video Service Industry

A. The IURC Uses a Variety of Sources to Report Data on Video Service Providers

To fully report the status of competition in the video service industry in upcoming years, the IURC has begun to track data on video service providers. With this data the IURC can track growth in video services subscribership, companies who are deploying video services, where companies are deploying services, and rates for video service. Several private research companies collect data on video service providers such as Kagan Research LLC, Warren Communications News, and the Television and Cable Factbook. The FCC collects data on companies with franchises and produces an Annual Report on the Market for the Delivery of Video Programming. Finally, the National Cable and Telecommunications Association (NCTA) reports on many studies by private companies or the FCC. Due to the variety of data sources and the lack of our own data set at this time, there is not one consistent set of data with the same reporting dates. We are working to bring together a comprehensive picture of the video industry.

Nationwide 65.4 million customers subscribe to basic cable, while in Indiana 1.39 million subscribe to basic cable.

Nationally, according to the FCC, as of June 2005, 65.4 million households subscribed to basic cable service[4] and 28.1 million households subscribed to premium cable services[5]. In Indiana, based on the Television and Cable Factbook, as of June 2006, 1.39 million households subscribed to basic cable service. Due to the different ways premium cable services is defined in the Television and Cable Factbook, the number of households subscribing to premium services in Indiana could not be calculated.

[4] Basic cable service is the level of cable television service that must be taken by all cable television subscribers. The content of basic cable service varies among cable systems but, pursuant to the Communications Act, must include all local television signals and public, educational, and governmental access channels and, at the discretion of the cable operator, may include other video services. Expanded basic cable service, also referred to as the cable programming service tier (CPST) for purposes of rate regulation, offers additional video channels on one or more service tiers. 47 U.S.C. § 543(b)(7); 47 U.S.C. § 543 (k)(2).

[5] Premium services are non-broadcast networks provided by a cable operator on a per-channel basis for an extra monthly fee. Pay-per-view (PPV) services are non-broadcast networks provided on a per program basis. PPV service is a separate category from premium service.

Comcast Cable is the top video service provider in Indiana with over 600,000 customers.

The video service industry is well known for its rapidly changing market structure: individual franchises are swapped or purchased, or entire companies are purchased or merged. According to the FCC there were 21 cable transactions in 2004, covering more than 2.7 million basic subscribers. This year the FCC approved the distribution of assets of Adelphia, which had declared bankruptcy several years ago, dividing its 4 million subscribers between Comcast Cable and Time Warner Cable. In the United States, according to Table 1, Comcast Cable is the largest video service provider, based on the number of basic cable subscribers, with over 21 million subscribers. Time-Warner is second with over 11 million subscribers, followed by Charter Communications, Cox Cable Communications, and Adelphia. This data set does not take into account the acquisition of Adelphia's assets by Comcast Cable and Time-Warner Cable because the exact distribution was not known as of March 2006, the date of the NCTA report.

Table 1
Top Video Service Providers Based on Number of Basic Cable Subscribers

United States (March 2006)		Indiana (June 2006)	
Comcast Cable	21,495,000	Comcast Cable	664,070
Time Warner Cable	11,039,000	Insight Communications	434,764
Charter Communications	5,913,900	Bright House Networks	120,100
Cox Cable Communications	5,400,000	Mediacom	51,887
Adelphia Communications	4,876,900	Charter Communications	35,843

Source**:** National Cable and Telecommunications Association for United States data; the Television and Cable Factbook for Indiana Data.

Similar to the national data, Table 1 shows that in Indiana Comcast Cable is the largest video service provider with 664,070 basic subscribers, followed by Insight Communications, Bright House Networks, Mediacom, and Charter Communications. In Indiana, Time Warner Cable acquired all of Adelphia's properties, which are in southern Indiana. As large ILECs such as Verizon and AT&T begin to enter the video services market, we expect to see a change in the Indiana rankings in Table 1.

Comcast Cable and Brighthouse Networks, the flagship operators in Indianapolis, are two of the top three cable systems in Indiana.

Of the 34 total video service providers active in Indiana, 12 are affiliated with rural Incumbent Local Exchange Companies (ILECs), representing almost one-third of all Rural ILECs. Two are affiliated with electric utilities.

Table 2 shows that while the majority of counties have two or three active video service providers, five counties have five active video service providers and eighteen counties have only one active video service provider. Appendix 1 shows all 92 Indiana counties and the companies that serve each county. It is important to note that in many cases these companies are offering

service in a portion of the county, and do not directly compete. We look at competition in the next section.

Table 2
Indiana Counties and Number of Active Video Providers

18 counties	1 Video Service Provider
27 counties	2 Video Service Providers
27 counties	3 Video Service Providers
15 counties	4 Video Service Providers
5 counties	5 Video Service Providers

Source: FCC Database and staff research

In terms of individual cable systems, nationally Houston, TX has the largest system based on the number of basic cable subscribers with 764,903 subscribers. In Indiana it is no surprise that the largest cable systems are in the major cities. As Table 3 shows the first and third largest cable systems are in Indianapolis, Comcast with 157,711 basic subscribers and Brighthouse Networks with 104,100 basic subscribers. Others include South Bend with 125,000 basic subscribers served by Comcast, Bloomington with 98,886 basic subscribers served by Insight, and Fort Wayne with 83,281 basic subscribers served by Comcast. Once large ILECs such as Verizon and AT&T enter the video services market, we expect a change in the Indiana rankings as shown in Table 3.

Table 3
Top Cable Systems[6] Based on Number of Basic Cable Subscribers

United States (December 2005)		Indiana (June 2006)	
Houston, TX (Time Warner Cable)	764,903	Indianapolis, IN (Comcast Cable)	157,711
Hicksville, NY (Cablevision Systems Corp.)	458,163	South Bend, IN (Comcast Cable)	125,000
Tempe, AZ (Cox Cable Comm.)	429,609	Indianapolis, IN (Brighthouse Networks)	104,100
Las Vegas, NV (Cox Cable Comm.)	410,256	Bloomington, IN (Insight Communications)	98,886
San Diego, CA (Cox Cable Comm.)	408,173	Fort Wayne, IN (Comcast Cable)	83,281

Source: National Cable and Telecommunications Association for United States data; the Television and Cable Factbook for Indiana data.

B. Competition in the Video Services Market Exists in Selected Areas of Indiana

Most video franchises, which use the public rights of way, are in effect exclusive: only one company has been granted franchise authority for a given area. Though rare, there are a few areas in Indiana where two companies overlap a service area. For example, small areas of Indianapolis are served by both Comcast Cable and Bright House Networks. A more common

[6] A cable system operator is "any person or group of persons (A) who provides cable service over a cable system, and directly or through one or more affiliates owns a significant interest in such cable system; or (B) who otherwise controls or is responsible for, through any arrangement, the management and operation of such a cable system." 47 U.S.C. § 522(5).

situation is the recent appearance of new video service providers "overbuilding" in areas already served by an existing company.

Competition for video services primarily comes from rural ILECs and occurs in rural areas.

Table 4 shows that competition between companies is occurring mostly in rural areas and is dominated by companies that are affiliated with rural ILECS. The IURC found 12 companies affiliated with rural ILECs competing in 18 communities with a population less than 15,000. Sigecom LLC and Cinergy Metronet, Inc., two companies affiliated with electric companies, compete in three communities with a population less than 15,000.[7] Sigecom also competes in Evansville. Comcast and Wideopen West Illinois LLC, companies not affiliated with rural ILECs or electric utilities, directly compete in Hammond.

Two government studies show that when competition exists in the video services market, rates fall substantially.

The General Accounting Office (GAO) completed two studies on the effects of overbuilders. In a 2003 study the GAO found that competition from an overbuilder resulted in cable rates 15 percent lower than in markets without competition and a 2004 study found rates on average 23 percent lower for basic cable and customers received a higher quality service[8]. In subsequent reports, we look to expand our examination of this question substantially.

[7] Vectren has agreed to sell its remaining stake in Sigecom LLC to Wideopen West Illinois LLC. The transaction is expected to close in the fourth quarter.

[8] U.S. General Accounting Office, *Issues Related to Competition and Subscriber Rates in the Cable Television Industry*, GAO-04-08, October 2003; U.S. General Accounting Office, *Wire-Based Competition Benefited Customers in Selected Markets*, GAO-04-241, October 2003.

Table 4
Video Service Providers Active in Indiana

Video Service Providers	**Subject to Competition with**:
Bright House Networks, LLC	
Cablevision Associates of Gary Joint Venture	
Century Cablevision Holdings, LLC	
Cequel III Communications II LLC	
Charter Communications Entertainment I	Perry –Spencer Communications, Inc. – Santa Claus
Comcast	RTC Communications Corp – Akron & Rochester Enhanced Telecom. Corporation – Batesville & Sunman Wide Open West Illinois LLC – Hammond
FOP Indiana LP	
Glass Antenna Systems Inc	
Insight Communications Midwest LLC	Enhanced Telecommunications Corporation – Greensburg Indiana Fones – Cadiz, Knightstown, Markelville, Maxwell, McCordsville, Sulphur Springs, Wilkinson Sigecom - Evansville Cinergy MetroNet – Greencastle Mulberry Cooperative Telephone Co - Mulberry
Interlink Communications Partners LLC	
Longview Cable and Data LLC	
Mediacom Indiana LLC	Ligtel Communications - Ligonier
Rapid Communications LLC	
SUSCOM (acquired by Comcast 6/06)	
Telecommunications Management LLC	
Time Warner Entertainment Company LP	Sigecom – Chandler and Newburgh
TV Cable of Winamac Inc	
TV Cable of Rensselaer Inc	
UCA, LLC	
Wideopen West Illinois LLC	Comcast - Hammond
ILEC Affiliated Video Service Providers	
Citizens Telephone Corp	
Enhanced Telecommunications	Comcast – Batesville & Sunman; Insight – Greensburg
Indiana Fones, Inc. (Hancock Telecom)	Insight - Cadiz, Knightstown, Markelville, Maxwell, McCordsville, Sulphur Springs, Wilkinson
Ligtel Communications	Mediacom - Ligonier
Mulberry Cooperative Telephone Co. Inc.	Insight – Mulberry
New Paris Telephone's Quality Cablevision	
Oak Hill Cablevision Inc (Sweetser Tel. Co.)	
Perry-Spencer Communications, Inc.	Charter – Santa Claus
RTC Communications Corporation	Comcast – Akron & Rochester
The Swayzee Telephone Co Inc	
Tele-Media Solutions (Washington County Coop)	
Tri-County Communications Corp	
Electric Co. Affiliated Video Service Providers	
Cinergy Metronet, Inc	Insight - Greencastle
Sigecom LLC	Insight – Evansville Time Warner Entertainment Co. LP – Chandler & Newburgh

Source: FCC Data and staff research

While not providing a complete illustration of the impact of competition on rates, Table 5 shows a sampling of rates for the lowest priced video services package by selected providers[9]. Comparison of these rates is difficult due to the differing number of channels offered. For example, Time Warner Entertainment offers its Basic package at $9.38 with 10 channels, while Bright House in Marion, IN offers its Limited Basic package at $15.54 with 27 channels.

Table 5
Selected Rates for the Lowest Priced Video Service Package

Company[10]	**Lowest Priced Plan**	**Cost**	**Channels**
Cequel III Communications (Cebridge) Bloomingdale[11]	Basic	$16.95	14 Channels
Bright House			
Marion	Limited Basic	$15.54	27 Channels
Indianapolis	Limited Basic	$12.07	21 Channels
Cinergy Metronet (BroadReach)	Standard Cable	$39.95	70 Channels
Citizens Telephone Corp.	Basic	$18.00	35 Channels
Comcast			
Kingsbury	Basic Cable	$17.29	22 Channels
Ft. Wayne	Limited Basic	$10.94	12 Channels
Glass Antenna System Fillmore	Basic	$30.00	34 Channels
Indiana Fones (Hancock Telecom)	Limited Basic	$14.95	14 Channels
Insight			
Bloomfield	Basic	$11.59	16 Channels
Lafayette	Basic	$13.55	21 Channels
LIGTEL Communications, Inc. (LIGTV)	Basic	$45.95	129 Channels (47 Music)
Longview Cable & Data (Longview Communications) Frankton	Limited Basic	$18.95	12 Channels
MediaCom- Wheatfield	Basic	$20.95	13 Channels
Mulberry Coop. Telephone Co. Inc.	Silver	$46.50	83 Channels
New Paris Telephone	Value Basic	$31.95	40 Channels
Oak Hill Cablevision	Basic	$21.50	35 Channels
Perry-Spencer Comm.	Basic	$14.95	21 Channels
Rapid Comm., Inc.(Rapid Cable)	Basic	$36.95	~50 Channels
RTC Comm. Corp.(RTC TV)	Basic	$20.00	11 Channels
SIGECOM	Basic	$41.50	72 Channels
Enhanced Telecom. Corp. Sunman	Basic	$31.95	75 + Channels
Swayzee Telephone	Basic	$23.00	33 Channels
Time Warner Entertainment Company LP (TW Cable)	Basic	$9.38	10 Channels
Tri-County Comm. Corp.	Basic	$37.50	57 Channels
TV Cable of Winamac	Basic	$43.10	72 Channels
Washington County Rural Telephone (Tele-Media Solutions)	Basic	$37.95	60+ 9 local channels

Source: staff research

[9] Companies use different terms for the lowest priced plan such as Limited Basic, Standard Cable, and Value Basic.
[10] Where a community is listed it is the rate for that community; where a community is not listed it is the rate for the company.
[11] Many of the companies serve more than one community that have different rates and number of channels. For the three largest companies in Indiana: Comcast, Brighthouse, and Insight we included two communities.

5. Technological Changes to Telecommunications and Traditional Cable Networks[12]

Few industries have been impacted by technology as much as telecommunications. Today's complex telecommunications system started 131 years ago as a simple experiment in the transmission of sound via a wire between two devices. Those experiments set off a revolution in how we communicate, and we are now on the verge of another revolution. This revolution will not only be about how we communicate, but what we communicate.

A. Coaxial Cable, Fiber-Optic Cable, and Electric Power Lines are Wireline Alternatives to Traditional Twisted Pair Copper Wire.

Telecommunication technology has come a long way from crude instruments to transmit and receive voice signals connected by "wires" to today's complicated systems. Today's wired service, with approximately 178.2 million lines nationwide[13] and approximately 3.56 million in Indiana[14], as of June 30, 2005, is provided over four technologies: twisted pair copper wire, coaxial cable, fiber-optic cable, and (in a few cases) broadband over power lines.

Twisted pair copper wire is the oldest method in use today and still the most prevalent. This technology is what most phone systems are built on, and provides excellent voice service and limited data service. Twisted pair copper is the only stand-alone system. All the other wireline technologies require back-up power to operate when there is a power failure.

In 1941, companies started using coaxial cable in place of copper wire for high-volume routes because of its higher capacity and bandwidth. Today, only cable companies are providing local voice service using coaxial cable. They use the cable in the traditional circuit switched format, or they provision Voice over Internet Protocol (VoIP) over it for local voice service. Using both technologies, nationally the cable companies provide local voice service to approximately 5 million customers[15].

Fiber-to-the-Home allows for very high data transfer speeds and is currently being deployed in parts of Indiana.

Fiber-optic cable was introduced in 1983 as a method to transport voice traffic. The phone companies have been using fiber-optic cable for long distance calls for years, but have only recently started to extend it all the way to the local consumer. The main reason for this is the cost of the optical transmitters and receivers. As the cost continues to decrease for this equipment and

[12] This discussion of technology is a high level overview of the different types of technologies, and how those technologies might be used or configured in the future. It is based largely on trade press articles and other content on various web sites; the mention (or lack of mention) of an item is not intended as either support or opposition for particular technologies, vendors, or providers.

[13] Local Telephone Competition: Status as of June 30, 2005, FCC: Industry Analysis and Technology Division, Wireline Competition Bureau, page 2 (April 2006) [FCC Local Telephone Competition Status Report].

[14] FCC Local Telephone Competition Status Report, Table 7.

[15] History of Cable, National Cable & Telecommunications Association.

consumer's needs for higher bandwidth increase, the deployment of fiber-optic cable will increase. An estimated 864,831 access lines were deployed nationwide using fiber a year ago, which has shown a steady increase from 307,151 in 2000[16]. In Indiana, for example, Verizon has deployed fiber-to-the-home to 113,000 homes in Allen County as of May 2006.[17]

BPL is a viable option for DSL or cable modem, and is currently being deployed in Indiana.

Broadband over power lines (BPL) is another emerging technology for providing voice service. This technology has been around for several years, but the means to get the broadband signal on and off the electric power line without interference from the voltage and current has taken time to develop. BPL uses VoIP technology, like some cable companies, to actually transmit the voice signal. BPL can be used as a substitute for DSL or cable modem, or can be deployed in remote areas where it is too expensive deploy DSL or cable modem. Lebanon Utilities and South Central Indiana REMC are deploying BPL.

B. Wireless Technology has Several Broadband Options.

1. Traditional Wireless Technology

Along with wireline options for broadband, wireless technology is developing broadband capability. The basic geographic unit of a wireless system is called a "cell", which is also the root of the generic industry term "cellular" (Note: In this report, we will be using the term "cellular" as an umbrella term to include mobile cellular, Personal Communications Service (PCS), and Commercial Mobile Radio Service (CMRS) systems, etc). Cellular frequencies are generally assigned to particular types of services or customers, although some frequencies may not have such restrictions[18].

From a technological standpoint, cell phones are actually radios, albeit very sophisticated ones. Cellular handsets transmit and receive signals through the air using radio frequencies. A cell phone can communicate on 1,664 channels or more and has a range of hundreds, or even thousands, of miles[19], depending upon the type of cell plan a subscriber has (e.g., "national" versus "regional" or "local" plans), as well as the roaming agreement(s) the subscriber's cell company has with other companies. Usually, there is one Mobile Telephone Switching Office (MTSO) per city, which handles call transfers to and from the wireline public switched telephone network (PSTN).

[16] per FCC's 2006 High-Speed Services for Internet Access: Status as of June 30, 2005, FCC: Industry Analysis and Technology Division, Wireline Competition Bureau, Table 1.
[17] Domains Magazine, May 3, 2006.
[18] The National Telecommunications and Information Administration manages the federal government's own use of frequencies; the Federal Communications Commission (FCC) manages the use of frequencies by other users, primarily through the awarding of licenses.
[19] "How Cell Phones Work," by Julia Layton, Marshall Brain, and Jeff Tyson, http://electronics.howstuffworks.com/cell-phone.htm . Page 2.

Cellular systems are now moving to a third generation ("3G") with broadband speeds.

Analog cellular systems formed the first generation of cellular technologies and are referred to as "1G." Digital technologies were implemented in the second generation and are referred to as "2G".[20] Digital signals are much more easily compressed and manipulated, so they can fit more channels within a given bandwidth and more calls within a given channel. They also tend to be clearer.

With the demand for some of the non-traditional content, services, and applications (camera, digital music, ringtones, VoIP, and video) growing, companies will need technology upgrades and/or additional network capacity to handle the increased bandwidth. For example, VoIP and real-time video require high bandwidth. Broadband cellular technologies form the third generation of cellular communications ("3G"); they have much faster processing times than 2G and provide much higher data transfer rates for Internet access, etc. [21] As more sophisticated Internet-based and multimedia capabilities are added to cellular systems and handsets, we will start to see "4G" systems.

2. Wireless Fidelity (Wi-Fi)

Another way to obtain wireless broadband is Wireless Fidelity (Wi-Fi). Wi-Fi is a group of fixed wireless broadband access standards established by the Institute of Electrical and Electronics Engineers-Standards Association (IEEE-SA). Currently approved standards include data throughputs ranging from 11 Megabits per second (Mbps) to 54 Mbps and a new standard is under development – although not yet approved - includes data throughputs ranging from 150 – 300 Mbps. Wi-Fi has a range of approximately 150 ft. indoors and 300 ft. outdoors[22].

Wi-Fi is fixed wireless broadband access that fills the needs of many travelers.

Wi-Fi allows a user to establish a wireless connection between a personal computer or other wireless device, and the Internet[23]. Wi-Fi Internet access service is currently available at public "hot spots" such as airports, truck stops, hotel lobbies, coffee shops, etc., sometimes at no cost. Wi-Fi fills an important niche for travelers needing broadband access, since many wireless broadband plans offer availability in limited areas. However, Wi-Fi is not an interconnected network, so the Wi-Fi system at a hotel is not connected to the Wi-Fi system at the coffee shop.

[20] Id. Pages 10 - 15.
[21] Id. Page 15.
[22] http://www.wifimanual.com/#566, Section 4, "What are the advantages and disadvantages of Wi-Fi anyway?"
[23] Wi-Fi technologies are also used to establish wireless internal computer networks on the premises for homes and businesses.

Wi-Fi systems do not require an FCC license because the potential for interference with other radio frequencies is low. That is, in part, because the "cell" sizes are very small and the power output is low relative to traditional cell towers or Wi-Max, discussed below.

3. World Interoperability for Microwave Access, Inc. (Wi-MAX)

World Interoperability for Microwave Access, Inc. (Wi-MAX) is an emerging family of technologies designed to provide first-mile and last-mile wireless broadband connectivity without the need for direct line-of-sight to a base station, and based on certain wireless standards developed by IEEE-SA. Like Wi-Fi, Wi-MAX started its life as a set of standards for fixed broadband connectivity. However, several recent reports suggest that Wi-MAX chip sets may be introduced in laptop computers and portable handheld devices by late 2006 or early 2007[24].

Wi-MAX could be used as a substitute to existing DSL or cable modem, or in remote areas unable to support DSL or cable modem

Fixed Wi-MAX is a point-to-multipoint technology, whereas mobile Wi-MAX is a multipoint-to- multipoint technology, similar to a cellular infrastructure. Both solutions were engineered to deliver ubiquitous high-throughput broadband wireless services at a low cost[25].

Unlike Wi-Fi, where connections can only be obtained over short distances, typical Wi-MAX cell sizes have a radius of between 1.8 and 6 miles[26]. At this range Wi-MAX could be used as a substitute to existing DSL or cable modem networks. It could also be used in rural or remote areas that might not be able to support DSL or cable modem service or networks.

One of the newer Wi-MAX standards, designed to provide both fixed and mobile wireless broadband connectivity purportedly provides shared data rates up to 70 Mbps, at distances of up to 70 miles.

C. VoIP Challenges How Voice Service is Provided to Consumers.

Once a broadband connection is established, Voice over Internet Protocol (VoIP) can be used for voice service. Most residential voice service today is provided over a switched network of either copper wire or fiber optics by sending either a digital or an analog signal over the network[27]. VoIP involves sending a packetized digital signal via the Internet using Internet Protocol. VoIP

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[24] See, e.g., WiMAX Forum: http://www.wimaxforum.org/about/;
Intel: http://www.intel.com/netcomms/technologies/wimax/index.htm?ppc_cid=ovt|wng_wimax|kC6E|s

[25] Based on introductory material from Intel, and from the WiMAX Forum. (Intel): http://www.intel.com/netcomms/technologies/wimax/index.htm?ppc_cid=ovt|wng_wimax|kC6E|s (WiMAX Forum, Frequently Asked Questions): http://www.wimaxforum.org/technology/faq The WiMAX Forum provides testing and certification of vendors' WiMAX systems and equipment to ensure compatibility with the IEEE-SA standards and interoperability with other WiMAX systems and equipment.

[26] *See*, WiMax Form: Frequently Asked Questions. http://www.wimaxforum.org/technology/faq and Wikipedia ["WiMAX"]: http://en.wikipedia.org/wiki/Wimax

[27] Business customers have more options, as their voice calls may also travel over non-switched, end-to-end circuits – e.g., special access or private line circuits.

has three components: a hardware/software component to change an analog voice signal to a digitalized packet; a connection to the Internet; and the Internet, whether public or private.

The Public Switched Telephone Network (PSTN) connection to the Internet may be a broadband connection from the end user to the Internet via an Internet Service Provider (ISP), or it can be an originating or terminating phone connection between the Internet and PSTN user via the local phone company. Depending on the provider, the traffic may use both the Internet and the PSTN, or only the Internet. Since so much voice traffic is still transmitted over the PSTN today, the Internet and the PSTN must be connected and work well together.

D. New Switching Technologies Increase the Efficiency of the Communications Network.

While the last-mile connection is the most important component of broadband, new switching technologies increase the efficiency of the communications network and foster the growth of broadband. In the traditional circuit switched network, a copper wire (circuit), runs from the home or business and carries an electrical analog signal to the phone company's office, where the signal is physically switched to another copper wire (circuit) that runs to another home or business. Thus, the name "circuit switched" network. The circuit switched network transmits voice very efficiently.

Digital switches are the most common switches for the circuit switched network. A digital switch is considered a "hard switch" as it only accepts one protocol. A protocol is a specific set of rules, procedures or conventions relating to format and timing of data transmission.

However, to transmit data, a more efficient system needed to be developed. A system that transforms the data into digital "bits" was developed; in subsequent efforts, these bits were assembled into packets. The Internet and Internet Protocol were established to implement the transport of these packets. The transport and routing of these packets takes place in a packet switched network.

The future of switching technologies is soft switches, optical switches, or a combination of soft and optical switches.

1. Soft Switches are Less Expensive than Digital ("Hard Switches") and are More Flexible.

As the communications network focuses more on transmitting data, there is a trend to replace digital switches with either soft or optical switches. Soft switches switch calls by means of software running on a computer system and are usually used between circuit and packet networks. Soft switches may be contrasted with circuit switches, which were originally designed solely to support voice. Soft switches are programmable network switches, which can support open standards and process multiple packet protocols. They support converged communications

services by integrating aspects of both packet networks and of today's most advanced circuit switched telephone signaling and control networks (Signaling System 7, or SS7)[28].

Capital expenditures for a soft switch will generally be lower – perhaps much lower – than the capital expenditures for a digital switch of similar capacity. This is partly explained by the differing switch architectures. In a digital switch, the call processing functions are performed within the switch. By contrast, soft switches offload call processing functions to industry standard server hardware (often called "media gateways", "call agents", or "call servers").

2. Optical Switches Can Move Data Rapidly.

Optical switches switch optical signals from one fiber optic path to another, typically using microscopic mirrors to move the signals between fibers. These switches can also switch wavelengths of light and, in doing so, expand the amount of data that the light can carry, by approximately 80 percent.

There is a companion technology, Wave Division Multiplexing (WDM), which assigns different signals to different wavelengths or "colors" of light (think of a rainbow); this allows multiple signals to be transmitted within a single optical fiber. Most optical switches require conversion from optical signals to electrical signals, and back to optical signals. However, one vendor, LAMBDA Optical Systems, advertises that it eliminates the need for signal conversion and performs all of the switching entirely "in native optical format"[29]. The switches of the future may be a hybrid of soft and optical switches.

E. Technology is Moving Toward a Convergence of All Networks.

Wireless, traditional wireline, and IP network technologies are converging. Vendors who develop the products and software, and the telecommunications companies that use these, are all working feverishly to integrate networks and to eliminate compatibility issues associated with many different types of network software systems.

The ultimate objective is to create a seamless connection between any network (circuit switched, packet switched, wireline, CMRS, Wi-Fi, Wi-Max, etc.)[30] for any IP-enabled content. Once this connection occurs a customer could have one single number, address book, and voice mail bank that could operate with any of these types of networks.

An example of such a system is IP Multimedia Subsystems (IMS). IMS was initially developed for wireless networks; however, fixed wireless and wireline networks are now supported by IMS standards. IMS uses open standard Internet Protocols, defined by the International Engineering

[28] Tech Encyclopedia. Definition: "softswitch", http://www.techweb.com/encyclopedia/printArticlePage.jhtml?term=softswitch

[29] http://www.lambdaopticalsystems.com/products-lambda-node-2000.php

[30] Cellular handset incompatibility is a significant problem. For example, when you change cellular service, (e.g., between Cingular and Verizon Wireless) a new handset is needed. An analogy to this problem is the proliferation of remote controls for electronic devises such as TV, CD, cable, and radio.

Task Force (IETF). By using open standard Internet Protocols, data transmission, whether it be voice or video, can pass between any network.

Furthermore, IMS itself often appears as but one component of an even larger system, Multi-Protocol Labeling System (MPLS), which is another IETF initiative. MPLS integrates information about network links (e.g., the bandwidth or utilization) with Internet Protocols to simplify and improve IP packet exchange. MPLS gives network operators a great deal of flexibility to divert and route traffic around link failures, congestion, and bottlenecks.

F. Traditional Cable Technology Has Moved From Antennas and Copper Wires to Fiber Optics and Coaxial Cable.

The video services industry has been dominated by the cable industry for over four decades. While new video service providers are deploying fiber to provide video services, it is important to understand traditional cable technology. The cable industry has made great technological strides the past 60 years. It all started with communities installing antennas on hilltops or tall buildings and connecting them to customers via wires to provide customers access to television service in areas with poor or no reception.

A typical cable system consisted of an antenna or satellite dish (located at a Head End which is analogous to a telephone central office), a distribution system (wires between the antenna and the customers), and electronics to make the signals compatible with the customers' television. Antennas have evolved from a simple TV antenna that can be purchased at Radio Shack to parabolic antennas, which receive microwave signals from satellites. The cable provider captures and converts the microwave signal, which it then transmits to the customer as video programming.

Pioneering systems used a simple antenna to obtain a signal and then amplified that signal as needed so the customer could receive a clear signal. These antennas only received signals from local broadcasting stations within 50-75 miles of the customer. Limited electronics were required to get the signal from the antenna to the customer's television.

New cable technology has increased the number of channels available to customers.

With advances in the technology of signal transmission, customers can receive programming from anywhere in the world. This has enabled companies to provide increased programming choices, which requires more channels to be provisioned. The added channel capacity requires additional and more sophisticated electronics at the Head End of the system to generate the signal to be transmitted over the distribution system.

Cable distribution systems consist of wires and amplifiers to get the signal to the customer. The first wires were plain copper wire. However, copper wires could not transmit a signal long distances (due to high attenuation rates or the tendency of a signal to deteriorate as it travels

over a long distance), and required a significant number of amplifiers to deliver the signal to the consumer. Coaxial cable has replaced copper wire because the signal can travel over long distances, and the cable itself is less susceptible to damage by the environment.

In 1976 cable companies started to install fiber optics in their distribution plant. Today, the typical cable distribution system consists of fiber optics in much of the distribution plant and coaxial cable to the final end-user. This significantly increased the capacity of the network, which also allowed cable companies to offer broadband services to their customers.

6. Effects of Competition and Technological Change on Universal Service

A. Universal Service is the Cornerstone of Telecommunications Policy.

Beginning with the two major federal communications legislation: the Communications Act of 1934 and TA-96 to HEA 1279, universal service is a cornerstone of telecommunications policy because it is this notion that makes customers a priority. "Universal service" is the specific term the IURC uses throughout this report, and it refers to ubiquitous telephone subscribership across the state of Indiana. Theodore Vail first conceived the concept of universal service in the late 1800s during his tenure at AT&T.

This notion has been at the center of some discussion with regard to the underlying intent and meaning of "universal service". Some argue that universal service refers to *universal access*, a system in which any user can connect to one universally available network; others suggest that the concept of universal service envisioned *affordable access*[31] for all consumers. Regardless of how each definition of universal service is applied, it is clear that with every new breakthrough in technology and reformulation of policies, the overarching concept of universal service has extended beyond traditional forms of telephone service. The IURC continues to monitor universal telephone service across Indiana and its overall affordability for consumers.

Since the passage of the Telecommunications Act of 1996 (TA-96), the definition of universal service expanded from affordable, nationwide telephone service to include, among other entities, rural health care providers and eligible schools and libraries. The FCC established that universal service(s) are essential to education, public health or public safety; have, through the operation of market choices by customers, been subscribed to by a substantial majority of residential customers; are being deployed in the public telecommunications networks by telecommunications carriers; and are consistent with public interest, convenience, and necessity.

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[31] *Compare* MILTON L. MUELLER, JR., UNIVERSAL SERVICE: MONOPOLY IN THE MAKING OF AMERICAN TELEPHONE SYSTEM 92 (1996) (arguing that when Theodore Vail championed "universal service," he did not mean "rate subsidies to make telephone service more affordable"; rather, he meant "the unification of telephone service under regulated monopolies") *with* PAUL STARR, THE CREATION OF THE MEDIA 446 (2004) (arguing that Vail envisioned a system of cross-subsidies based on standard rates, such as those used by the post office).

This reference to public interest is a key point for Indiana's consumers because it means that access to telephone service (and related functions such as access to emergency services (911) and the ability to make long distance phone calls) is a necessity for everyday life. Indiana's policymakers have recognized that telephone service is indeed a basic tenet for society as a whole and therefore, have strived to keep rates for local and long distance services at affordable levels for consumers.

B. Telephone Subscribership Remains a Priority for Indiana as the Markets Change and the Economy Grows.

Telephone subscribership (also called telephone penetration) is defined as the percentage of households with telephone service, and represents the most essential tool for measuring universal service. Prior to the 1980s, precise measurement of telephone penetration was not a priority. Typically, telephone penetration was measured by dividing the number of residential telephone lines by the number of households.

Indiana remains as one of only twelve states with a telephone subscribership rate of 92.9% or less.

Measures of penetration based on the number of residential lines however, became subject to a significant margin of error as more households added second and third lines. The FCC had attempted to improve this measurement tool by seeking help from the Census Bureau and including survey questions in the Current Population Survey regarding household telephone availability in years between their decennial census.

The FCC collects data on telephone subscribership rates every year. Table 6 shows that Indiana was within 0.5% of the subscribership rate in the United States until 2001 topping out at 94.5% in 2000. In July of 2005, (the latest date for which data is available) the FCC reported that the telephone subscribership rate in the United States was 94% while in Indiana it was only 90.9%, a difference of 3.1%. *Indiana remains as one of only twelve states with a telephone subscribership rate of 92.9% or less*[32].

Table 6
Telephone Subscribership Rates 1996 - 2005

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Indiana	93.7%	93.8%	94.4%	93.8%	94.5%	93.9%	93.4%	93.5%	**91.8%**	**90.9%**
U.S.	93.9%	93.9%	94.1%	94.2%	94.4%	94.9%	95.3%	95.1%	**93.8%**	**94.0%**

Source: FCC

While Indiana has actually experienced a slight decline of telephone subscribership since 1996 for the provision of traditional wireline technology, it is important to note that during the latter part of this period there was substantial development and growth in wireless telephony. In fact,

[32] FCC 2005 Telephone Subscribership Report, Chart 2 July 2005 Telephone Penetration.

as Table 7 shows the FCC reports that as of June 2005 there were over 3.2 million wireless subscribers in Indiana[33], compared to 1.7 million subscribers in 2000.

Table 7
Wireless Subscribers 2000 - 2005

	2000	2001	2002	2003	2004	2005
Indiana	1,717,378	1,781,247	2,032,290	2,456,509	2,844,568	3,228,140
U.S.	90,643,058	114,028,928	130,751,459	147,623,734	167,313,001	191,345,746

Source: FCC

As policymakers, the IURC often considers the impact of new technology on telephone subscribership and access to service(s). While the advent of wireless technology has undoubtedly had an impact on continued wireline growth in terms of subscribership, the *extent* of the impact on wireline growth is still being debated across the nation. Thus, it would be incorrect to say that Indiana does not have 100% penetration rates due to the growth of wireless subscribership because arguably, most subscribers still use wireless phones as a compliment to wireline service, not a substitute for it. The important notion for policymakers to consider is not necessarily how consumers are connected, although it does have its proper place in the overall context of the discussion, but rather the availability and quality of that service as well as its affordability.

Geographic challenges or social practices in certain Indiana counties may to lead to telephone subscribership rates below the state average. This is particularly true for areas with high concentrations of Old Order Amish congregation and migrant worker populations within several Indiana counties, including Elkhart and LaGrange counties. The Amish and immigrant presence obscure the influence of other factors on telephone penetration levels, as noted in a prior Commission reports[34]. The IURC is always monitoring subscribership levels and with the new data reporting requirements as laid out by the General Assembly, the IURC shall be in a better position than in years past to study the factors that influence overall penetration rates across the state.

C. Income is a Factor for Telephone Subscription Rates.

Income is also a significant factor regarding telephone penetration rates. In Indiana as well as in other states, it is evident that those households at or below the poverty line struggle to maintain telephone service. The 2005 federal poverty guideline for a family of four is $19,350. According to 2004 census data, Indiana ranked 36th among other states in terms of population at or below poverty guidelines with census estimates of 9.7% to 11.9% living at or below the poverty line.

[33] FCC April 2006 Local Competition Report, Table 14.
[34] 1995 Indiana Utility Regulatory Commission Report to the General Assembly, p. 77.

The percentage of households with telephone service by income bracket continues to be measured on an annual basis by the FCC[35]. The results from the FCC, shown in Table 8, are very telling and reveal that in Indiana, telephone penetration among those individuals earning less than $9,999 and $10,000-$19,999 were just 83.3% and 90.5% respectively[36]. Those individuals earning $40,000 or more represented the highest telephone penetration rates in the state with 96.8%[37]. Indiana continues to lag behind the nation with its telephone subscribership rates.

Table 8
2005 Percentage of Households with Telephone Service by Income

	$9,999 or less	$10,000-$19,999	$20,000-$29,999	$30,000-$39,999	$40,000 or more	Household Average
Indiana	83.3%	90.5%	94.6%	90.6%	96.8%	91.3%
U.S.	85.7%	93.2%	96.2%	97.6%	98.8%	93.9%

Source: FCC

The relationship between income and telephone subscribership has been a concern among states for quite some time. In 1984, the FCC established a Lifeline program designed to promote universal service by providing low-income individuals with discounts to the monthly cost of telephone service; the Link-up program provides a discount on the initial connection fee.

Over the subsequent fifteen years, the FCC continued to expand the program and its associated rules culminating with the latest modification in April 2004. Since the mid-1980s when the Lifeline and LinkUp programs were established, penetration rates among the lowest income households have grown from 80% to 88%[38] nationally. Indiana's subscribership rates among low-income consumers have seen modest increases as well. States which have taken full or nearly full advantage of federal universal service support for low-income consumers by instituting a state-based supplemental Lifeline program saw an average growth in telephone penetration for low-income households of over 3 percent from March 1997 to March 2004.

D. Indiana Implements a state Lifeline Fund to Assist Eligible Consumers.

In contrast, states that did not provide any Lifeline support beyond the basic federal support saw an average decline in telephone penetration rates for low-income households between March 1997 and March 2004 of 2.1%[39]. While income may not be the sole predictor of penetration rates for telephone service, it certainly would appear to be the primary factor given the results from the FCC's data.

[35] Four income categories are routinely chosen: $9,999 or less; $10,000 - $19,999; $20,000 - $29,999; $30,000 - $39,999; and $40,000 or more. To date, these categories are chosen because they are of approximately equal size, both in terms of income ranges and the number of households in each category.
[36] FCC 2005 Telephone Penetration by Income by State (Data through 2004)
[37] Id.
[38] 2005 Universal Service Monitoring Report prepared by Federal and State Staff of the Federal-State Joint Board on Universal Service in CC Docket Number 96-45.
[39] Id.

The Indiana General Assembly sought to alleviate some of the financial barriers to low income consumers associated with telephone service.

The General Assembly recognized the need to provide assistance for Indiana's consumers who are financially vulnerable and who qualify for assistance based on income and/or social program(s). HEA 1279 directed the IURC to implement rules for the establishment of a state Lifeline fund to assist consumers with establishing phone service and maintaining that service on a monthly basis. On July 6, 2006, the IURC opened Cause No. 43082 to address the funding mechanism for the Lifeline fund. The rules for this fund are to be in place by 2008 and the fund itself shall be fully operational by 2009. By having a state fund in place, the FCC data suggests that Indiana could see an increase in telephone penetration rates, particularly among low-income consumers.

Similar to qualifications under the federal Lifeline program, Indiana's eligible consumers qualify for reduced rates for basic local service under the Indiana State Lifeline Fund by statute, if they are enrolled in one or more of the following programs: National School Free Lunch (NSL), Temporary Aid for Needy Families (TANF), Medicaid, Low Income Energy Assistance Program (LIHEAP), Food Stamps, Public Housing/Section 8, and/or Supplemental Social Security Income (SSI). Additionally, a consumer shall also be eligible if his or her income does not exceed one hundred fifty percent (150%) of the federal poverty guidelines. The eligibility criterion is broader than the federal criteria in that it expands the income qualifier. The federal qualifier is one hundred thirty five percent (135%) of the federal poverty guidelines. This additional percentage should increase the number of people who are eligible to receive assistance.

With the passage of HEA 1279, the legislature has acknowledged the importance of connecting Indiana's consumers to the communications network and the importance of educational outreach. Specifically, a portion of the funding will go to publicize the availability of the program in a manner reasonably designed to reach eligible consumers[40]. As a state agency, building awareness of the Lifeline program and its benefits is a priority for the IURC on a going-forward basis in an effort to keep Indiana's consumers connected to the communities in which they live and work.

7. Effects of Competition and Technological Change on Pricing of All Telecommunications Services

A. The Definition of Telecommunications Services From TA-96 Encompasses Many Services.

The General Assembly adopted the definition of telecommunications services from the Telecommunications Act of 1996 (TA-96). TA-96 defines telecommunications services as "the offering of telecommunications for a fee directly to the public, or to such classes of users as to be

[40] IC 8-1-36, Section 8

effectively available to the public, regardless of the facilities used." (47 U.S.C. 153 Definitions) Telecommunications is defined as "the transmission, between or among points specified by the user, or information of the user's choosing, without change in the form or content of the information as sent and received." (47 U.S.C. 153 Definitions).

When working with these definitions, it important to clarify that some communications services are not considered telecommunications services. While high-speed Internet service (e.g., DSL and cable modem) may have a telecommunications services component, these services are not considered telecommunications services for the purposes of this section of this report.

Still, telecommunications services encompass a vast array of services, products, and market segments. Documents filed with the IURC that show rates, terms, and conditions of services offered by Incumbent Local Exchange Carriers and Competitive Local Exchange Carriers list many telecommunications services ranging from Basic Telecommunications Service to stand-alone toll services to packages of services that include Basic Telecommunications Service, long-distance services and an array of voice-calling features (e.g., call waiting, call forwarding, speed dialing, etc.).

Broadly speaking, telecommunications services have three components: customer access, switching, and transport. Customer access consists of the "last mile" connection of an individual customer's location to the network. Switching is the ability to route a customer's traffic to its destination. Transport is the functionality that moves a customer's traffic within the network towards its destination between the points where is it routed. These components are not purchased separately by customers, but are simply reflected in the telecommunications service purchased by the customer.

B. Technology Has Increased Competition for Telecommunications Services.

While telecommunications services were historically limited to voice service provided by monopoly providers operating in exclusive geographic territories using copper wires, developments in technology have enabled new methods of providing voice calling services. These technological advances include cellular telephone service, which has become a mainstay of everyday life; and VoIP, an alternative to voice service that uses a broadband telecommunications connection, which is beginning to capture customers in the voice service market.

Of course, a broadband telecommunications connection is also used for High-Speed Internet services today and to a lesser but growing extent, video programming. These technological changes have empowered additional competitive telecommunications providers to vie for customers through the offering of lower prices, and new and innovative telecommunications or telecommunications-enabled service offerings.

Technology has the greatest impact on reducing prices for high volume traffic customers and customers who purchase multiple services.

Technology has the greatest impact on reducing prices for high volume traffic customers, such as enterprise businesses, who exchange extensive telecommunication traffic, which can be delivered more efficiently through higher capacity fiber optic facilities. Additionally, technology significantly lowers the prices paid by those customers who purchase multiple services, due to the high revenues they generate. These revenues are necessary to justify economically the deployment of such capital-intensive technology.

For example, the use of fiber optic cable can greatly decrease the cost of hauling telecommunications traffic over long distances, due to its bandwidth capacity, as reflected in low prices for long distance voice calls enjoyed by consumers today. Even after buried in the ground, fiber optic cable can further lower prices, as advances in technology occur. For example, with improved modulation technology (i.e., changing the characteristics of an optical wave such as amplitude or frequency), even more traffic can pass through those existing cables, further expanding their capacity.

Residential telecommunications customers too can benefit from the deployment of fiber optic technology in the local network. The additional capacity provided by the fiber optic cables gives carriers the ability to offer customers a variety of new services such has high-speed Internet service and video programming.

Technology has also reduced the cost for telecommunications switching equipment, which provide voice calling vertical features such as Caller ID and three-way calling. Customers of bundled packages of voice calling services have seen lower prices, with the entry into the market by alternative providers empowered by the increasing availability of relatively inexpensive switching equipment.

The IURC has not determined the impact of technology on the rate for Basic Telecommunications Service[41]. First, to maintain high telephone subscribership, the rate for Basic Telecommunications Service has been capped for the large incumbent provider. Second, the cost of fiber strands and the installation cost to deploy fiber are higher than the current, significantly depreciated copper wire based network. Third, by definition the customer does not purchase any other services and the company cannot spread costs that can be considered common among many services.

C. Comparison of Four Telecommunications Services

In lieu of analyzing a broad range of telecommunications services and prices, we focus on four specific telecommunications services and include characteristics beyond price. Unlike many

[41] Basic Telecommunications Service is defined as stand-alone telephone service that is the sole service purchased by a residential customer through the customer's primary line. (IC 8-1-2.6-0.1)

products and services, telecommunications services have characteristics well beyond price and service quality. In Table 9 we compare Basic Telecommunications Service, wireline telephone service with vertical features, cellular telephone service, and VoIP based on a number of characteristics beyond pricing including calling scope, equipment requirements, emergency calling, power source, and service reliability. All rates exclude promotions, taxes, fees, and other surcharges.

Table 9
Comparison of Four Telecommunications Services

Residential Voice Telephone Calling Options	**Basic Telecommunications Service**	**Basic Telecommunications Service with Toll and Vertical Features**	**Cellular Telephone Service**	**Voice-over-IP (VoIP)**
Price Range (per month)	$4.45-$23.80	Dependent on Number of Vertical Features; for a Full Range of Vertical Features and Unlimited Toll up to $65.00	$29.99 - $199.99 for Individual Plans; $59.99 -$299.99 for Family plans; Additional Charges if Allocated minutes are exceeded	Unlimited minutes: $24.95 – 39.95; Limited Number of Allocated Minutes at Lower Rate (see additional necessary costs below)
Free Calling Scope	Local: Typically no More Than 10-15 Miles	Varies from Local to Nationwide	Varies from Local to Nationwide	Typically Nationwide or global
Equipment Requirements and Costs	Basic Telephone Handset: as Low as $5.00	Basic Telephone Handset: as Low as $5.00	Phone: Subsidized and Sometimes Free, With Term Contract	Phone adaptor (modem) and Handset $50-100, with Term Contract
Additional Necessary Costs	None	None	Application Fees	High-Speed Broadband Internet Connection
Amount of Included Local Usage	Unlimited Minutes	Unlimited Minutes	Various Packages of included minutes	Various Packages of Fixed Minutes or Unlimited usage
911 Emergency Calling	Enhanced 911: Street Address of Caller Displayed for Operator	Enhanced 911: Street Address of Caller Displayed for Operator	Location of Caller Determined to Within 100 feet for providers and locations where Phase II has been implemented	User Configuration Necessary for Proper Routing of 911 Calls
Power Source	Power Supplied Through Phone Line	Power Supplied Through Phone Line	Battery in Phone and/or External Power Charger	Externally Powered
Mobility of Service	Fixed Location Only	Fixed Location Only	Movable	Movable and Fixed Locations
Vertical Features (e.g. Caller ID)	Not Included	Included in Package or Individually Available	Typically Included with Service	Included in Package or Individually Available
Service Reliability	Very Reliable	Very Reliable	Dependent on Cellular Antenna Coverage	Dependent on Reliability of Broadband Connection

Source: Schedules of Rates, Terms, and Conditions filed with the IURC; staff research

Customers must look at more than rates when comparing alternatives to wireline voice service.

Table 9 reveals the inherent complexity in simply comparing rates for telecommunications services. For example, VoIP service requires a high-speed connection while cellular and wireline service do not. Customers with a medical condition may focus on the preciseness of 911 Emergency Calling or the ability of the phone to work in the event of a power outage. In the end it is a combination of factors that determines a customer's choice of a service. In some cases a customer may choose a combination of services such as VoIP and cellular.

D. Discretionary Surcharges Confuse Customers and Make Price Comparisons More Difficult

While technology and competition have increased the choices for customers and in some cases resulted in lower prices, one trend in the past few years is the increasing use of surcharges. Surcharges are those line items added to a customer's bill in addition to the price for the service(s) that the customer is purchasing.

Surcharges on telecommunications carrier's bills fall into two general categories: Government Authorized and Discretionary. Government authorized surcharges allow the carrier to recover costs for certain programs and policies promoted by the FCC or state Commissions. Universal Service Fund, Local Number Portability, 911, Telecommunications Relay Service, and Subscriber Line Charge are examples of government authorized surcharges.

The IURC supports the FCC Truth-in-Billing orders, but discourages the use of discretionary surcharges.

Discretionary surcharges are not specifically authorized by a governmental agency. Carriers assert that these additional charges to customers are to recover administrative costs for regulatory programs and other costs. These surcharges can range from a few cents to a significant percentage of the customer's bill. Discretionary surcharges are attractive to carriers in a competitive environment because they can increase revenues for services without increasing their quoted basic monthly rate - the price most consumers consider when comparing the cost of service. Telecommunication carriers use various names for their discretionary surcharges including Regulatory Assessment Fee, Universal Connectivity Charge, Primary Carrier Charge, and Carrier Cost Recovery Surcharge. For example, Choice One Communications includes a Carrier Cost Recovery Surcharge of $1.62 per line.

Discretionary Surcharges can be confusing to consumers and make price comparisons among competing carriers more difficult, because carriers typically do not quote the final rate to

consumers after taxes and surcharges are added to the bill. Without the ability to make a comparison among several carriers, the customer cannot obtain the lowest rate for services.

The FCC's Truth-in-Billing and Format Order, released March 18, 2005, declined to prohibit carriers' use of discretionary surcharges and specifically prohibited states from regulating or prohibiting wireless carriers' line items or surcharges. However, common carriers and wireless carriers are subject to following requirements found in the various FCC Truth-In-Billing Orders:

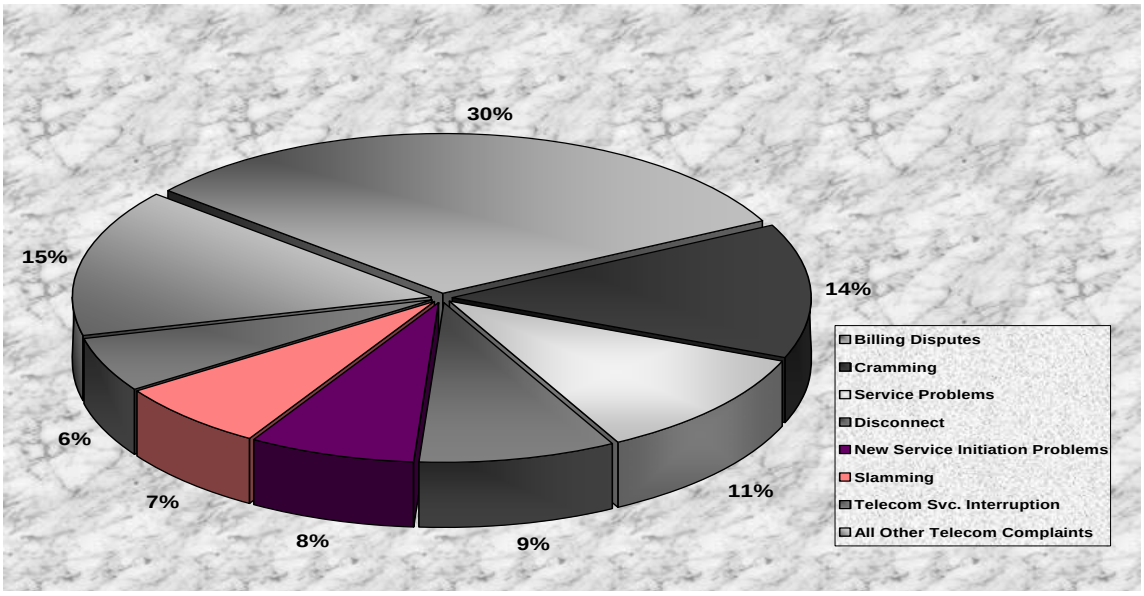
- for third-party providers whose charges appear on the carrier's bill, identify the telecommunications service provider(s) and separate charges on bills by service provider, and notify customers when a new entity has begun providing service;
- provide on telephone bills brief, clear, non-misleading, plain language descriptions of services rendered;
- provide a toll free number for customers to call to lodge a complaint or to obtain information about any charge contained in the bill;
- identify on bills those charges for which failure to pay will not result in disconnection of the customer's basic local service;
- use standardized labels on bills to refer to certain line item charges relating to federal regulatory activity, such as the Primary Interexchange Carrier Charge, Local Number Portability Charge, and Subscriber Line Charge; and
- Carriers may not present discretionary surcharges in a manner that suggest such surcharges are taxes or charges required or authorized by government.

8. Complaints Registered with the IURC's Consumer Affairs Division in 2005 and the Impact of HEA 1279

Confusion with discretionary surcharges may result in a customer registering a complaint with the IURC's Consumer Affairs Division. In 2005, the IURC's Consumer Affairs Division continued its traditional role of registering and resolving consumer complaints.[42] As Chart 1 shows Billing Disputes dominated all categories with 30 percent (607) of the total telecommunications complaints. This was followed by Cramming with 14 percent (263), Service Problems with 11 percent (215), Disconnection with 9 percent (168), New Service Initiation Problems with 8 percent (140), Slamming with 7 percent (131), and Telecommunications Service Interruptions with 6 percent (107). The category labeled All Other Telecommunications Complaints includes many services such as wireless, VoIP, Long Distance, DSL, and 800/900 scams which the IURC has no jurisdiction over.

[42] For four months in 2005 the Office of Utility Consumer Counselor registered and resolved slamming and cramming complaints.

Chart 1
Complaints Registered with the Consumer Affairs Division in 2005



The Consumer Affairs Division continues to register all complaints but now directs customers to the company to resolve most complaints.

With the passage of HEA 1279 the role of the Consumer Affairs Division has changed. It continues to register all the complaints listed above but now directs customers to the company to resolve most complaints.[43] The Consumer Affairs Division maintains it ability to resolve complaints regarding Basic Telecommunications Service, slamming, and cramming. Furthermore, on July 1, 2006, the Consumer Affairs Division began to register video service complaints and directs customers to their video service provider for resolution.

[43] AT&T, Verizon, and Embarq are still required to follow their Alternative Regulatory Plan until it expires.

Appendix 1
Active Video Service Providers By County

Adams
Insight Communications Midwest LLC
Mediacom Indiana LLC

Allen
Comcast
Longview Cable And Data LLC
Mediacom Indiana LLC

Bartholomew
Charter Communications
Comcast
SUSCOM (acquired by Comcast 6/06)

Benton
Insight Communications Midwest LLC
Longview Cable And Data LLC

Blackford
Comcast
Insight Communications Midwest LLC

Boone
Bright House Networks, LLC
Longview Cable And Data LLC
Insight Communications Midwest LLC
Rapid Communications LLC

Brown
Insight Communications Midwest LLC
Interlink Communications Partners LLC

Carroll
Comcast

Cass
Comcast
Longview Cable And Data LLC
Insight Communications Midwest LLC

Clark
Insight Communications Midwest LLC

Clay
Cequel III Communications II LLC
Interlink Communications Partners LLC

Clinton
Comcast
Longview Cable And Data LLC
Insight Communications Midwest LLC
Mulberry Cooperative Telephone Company, Inc.
Tri-County Communications Corp

Crawford
Charter Communications

Daviess
Cequel III Communications II LLC
Charter Communications
Interlink Communications Partners, LLC

De Kalb
Longview Cable And Data LLC
Mediacom Indiana LLC

Dearborn
SUSCOM (acquired by Comcast 6/06)
Sunman Cablevision Company
Time Warner Entertainment Company LP

Decatur
Comcast
Insight Communications Midwest LLC
Longview Cable And Data LLC
Sunman Telecommunications Corporation

Delaware
Comcast
Insight Communications Midwest LLC
Longview Cable And Data LLC

Dubois
Charter Communications
Longview Cable And Data LLC
Insight Communications Midwest LLC
Perry-Spencer Communications, Inc.

Elkhart
Comcast
Mediacom Indiana LLC
New Paris Telephone's Quality Cablevision Inc

Fayette
Comcast

Floyd
Insight Communications Midwest, LLC

Fountain
Comcast
Longview Cable And Data LLC
Insight Communications Midwest, LLC

Franklin
Comcast

Fulton
Comcast
Longview Cable And Data LLC
RTC Communications Corporation
TV Cable Of Winamac Inc

Gibson
Cequel III Communications II LLC
Charter Communications
Insight Communications Midwest LLC

Grant
Bright House Networks, LLC
Insight Communications Midwest LLC
Longview Cable And Data LLC
Oak Hill Cablevision Inc
The Swayzee Telephone Co Inc

Greene
Cequel III Communications II LLC
Longview Cable And Data LLC
Insight Communications Midwest LLC

Hamilton
Bright House Networks, LLC
Comcast
Longview Cable And Data LLC
Insight Communications Midwest LLC

Hancock
Bright House Networks, LLC
Indiana Fones, Inc.
Insight Communications Midwest LLC

Harrison
Century Cablevision Holdings, LLC, Debtor-In-Possession
Insight Communications Midwest, LLC

Hendricks
Bright House Networks, LLC
Charter Communications
Comcast
Longview Cable And Data LLC

Henry
Indiana Fones, Inc.
Insight Communications Midwest LLC

Howard
Insight Communications Midwest LLC

Huntington
Citizens Telephone Corp
Comcast
Longview Cable And Data LLC

Jackson
Comcast
Longview Cable And Data LLC
Insight Communications Midwest LLC

Jasper
Comcast
Mediacom Indiana LLC
TV Cable Of Rensselaer Inc

Jay
Insight Communications Midwest LLC

Jefferson
Fop Indiana LP

Jennings
Comcast

Johnson
Charter Communications
Insight Communications Midwest LLC

Knox
Cequel III Communications II LLC
Interlink Communications Partners, LLC

Kosciusko
Comcast
Longview Cable And Data LLC
Mediacom Indiana LLC

La Porte
Comcast
Mediacom Indiana LLC

Lagrange
Comcast
Longview Cable And Data LLC
Mediacom Indiana LLC

Lake
Cablevision Associates Of Gary Joint Venture
Comcast
Mediacom Indiana LLC
Wideopen West Illinois LLC

Lawrence
Insight Communications Midwest LLC
Interlink Communications Partners LLC

Madison
Bright House Networks, LLC
Insight Communications Midwest LLC
Longview Cable And Data LLC

Marion
Bright House Networks, LLC
Comcast

Marshall
Comcast
Mediacom Indiana LLC
Twfanch-One Company

Martin
Cequel III Communications II LLC
Charter Communications
Longview Cable And Data LLC

Miami
Comcast
Insight Communications Midwest LLC
Longview Cable And Data LLC
Oak Hill Cablevision Inc

Monroe
Insight Communications Midwest LLC

Montgomery
Comcast
Longview Cable And Data LLC
Tri-County Communications Corp

Morgan
Charter Communications
Comcast
Insight Communications Midwest LLC

Newton
Mediacom Indiana LLC
TV Cable Of Rensselaer Inc

Noble
Comcast
Longview Cable And Data LLC
Ligtel Communications, Inc.
Mediacom Indiana LLC

Ohio
SUSCOM (acquired by Comcast 6/06)

Orange
Charter Communications
Interlink Communications Partners LLC

Owen
Insight Communications Midwest LLC

Parke
Cequel III Communications II LLC
Longview Cable And Data LLC
Rapid Communications LLC

Perry
Charter Communications
Comcast
Perry-Spencer Communications, Inc.

Pike
Charter Communications
Longview Cable And Data LLC

Porter
Comcast
Mediacom Indiana LLC

Posey
Insight Communications Midwest LLC
Telecommunications Management, LLC

Pulaski
Mediacom Indiana LLC
TV Cable Of Winamac Inc

Putnam
Cequel III Communications II LLC
Cinergy Metronet, Inc
Clay County Rural Telephone Cooperative, Inc.
Longview Cable And Data LLC
Glass Antenna Systems Inc
Insight Communications Midwest LLC

Randolph
Comcast
Insight Communications Midwest LLC
Time Warner Entertainment Company LP

Ripley
Comcast
Miles Communications
SUSCOM (acquired by Comcast 6/06)
Enhanced Telecommunications Corporation

Rush
Comcast
Longview Cable And Data LLC
Insight Communications Midwest LLC

Shelby
Longview Cable And Data LLC
Insight Communications Midwest LLC
SUSCOM (acquired by Comcast 6/06)

Spencer
Charter Communications
Longview Cable And Data LLC
Perry-Spencer Communications, Inc.
UCA, L.L.C., Debtor-In-Possession

St Joseph
Comcast
Mediacom Indiana LLC
Twfanch-One Company

Starke
Mediacom Indiana LLC

Steuben
Longview Cable And Data LLC
Mediacom Indiana LLC

Sullivan
Cequel III Communications II LLC
Insight Communications Midwest LLC

Switzerland
Fop Indiana LP

Tippecanoe
Comcast
Longview Cable and Data LLC
Insight Communications Midwest LLC
Rapid Communications LLC
Tri-County Communications Corp

Tipton
Insight Communications Midwest LLC

Union
Comcast
Time Warner Entertainment Company LP

Vanderburgh
Insight Communications Midwest LLC
Sigecom LLC
Telecommunications Management, LLC
Twfanch-One Company

Vermillion
Longview Cable And Data LLC
Insight Communications Midwest LLC
Rapid Communications LLC

Vigo
Cequel III Communications II LLC
Interlink Communications Partners LLC
Rapid Communications LLC
Time Warner Entertainment Company LP

Wabash
Comcast
Galaxy American Communications Inc (Longview)
Longview Cable And Data LLC
Mediacom Indiana LLC

Warren
Insight Communications Midwest LLC
Longview Cable And Data LLC

Warrick
Cequel III Communications II LLC
Charter Communications
Insight Communications Midwest LLC
Sigecom LLC
Warrick Indiana LP

Washington
Insight Communications Midwest LLC
Tele-Media Solutions

Wayne
Insight Communications Midwest LLC
Twfanch-Two Co

Wells
Comcast
Mediacom Indiana LLC

White
Comcast

Whitley
Longview Cable And Data LLC
Mediacom Indiana LLC